

## CURRENT AND FUTURE TRENDS IN OPEN AND DISTANCE AND ELECTRONIC LEARNING ENVIRONMENT IN NIGERIA

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### **Abstract**

*The author of this theoretical paper decided to embark on this discourse, which falls within the confined of the current and future trends in open and distance and electronic learning environment in Nigeria. In the paper, the importance of open and distance and electronic learning environment was critically discussed with particular emphasis on issues relating to educational effectiveness, accessibility and inclusivity. The disadvantages of open and distance and electronic learning environment was also discussed in the paper. The the current and future trends in open and distance and electronic learning environment was also looked at in the paper. The application of learning management systems in open and distance and electronic learning environment was also discussed in the paper. The application of artificial intelligence in open and distance and electronic learning environment was further discussed in the paper. Logical conclusions were highlighted and suggestions for future practices were further enumerated.*

**Keywords:** *Current Trends, Electronic Learning Environment, Future Trends, Open and Distance learning.*

### **Introduction**

The increasing rates of the number of students in conventional educational institutions, rapid technological development, personality development in education due to geographical separation, new learning theories have led to the introduction of new concepts and technologies into education. Open learning or distance learning and electronic learning or e-learning are some of the new technologies and concepts required for teaching and learning effectiveness. Electronic learning technologies have a revolutionary impact on educational methodology. Distance learning, on the other hand, actually relied on open or e-learning technologies to function effectively.

According to Ololube (2018), distance learning, also referred to as open learning is a form of education in which there is normally a separation between instructors and learners in space and time. Distance learning or open learning is the education of students who may not always be physically present at school. Traditionally, this type of education usually involved correspondence courses in which the student corresponds with the school through post. Today, distance or open learning involves or is regarded as online education.

However, distance learning is a highly-specific subset of online learning, since it frequently takes place over the Internet. Therefore, the success, survival or transformation of distance learning may depend on its capacity to align, appropriate or co-opt any of the other trends evolving in the educational technology spaces of practice and policy (UNESCO, 2002; Ololube, 2018).

Online learning is a form of learning that utilizes electronic means to create a more dynamic and instructive learning environment. Online learning is producing a whole new set of strategies for improving, engagement, retention and mastery of the education process (Ferrer, 2018). This has changed the landscape of modern and current trends in education. Online learning environment has made education effective, flexibility in choosing where people learn, when people learn and even how people learn, learner-centred, provision of education in more than one place at low cost, compared to other forms of traditional mode of education. The e-learning environment refers to the online learning environment utilized for knowledge acquisition within computer mediated digital systems. The term “e-learning environment” can also be referred to a virtual learning environment. A virtual learning environment in educational technology is a web-based platform for the digital aspects of courses of study, usually within educational institutions. A virtual learning environment present resources, activities and interactions within a course structure and provide for the different stages of assessment.

Traxler (2018) stated that e-learning technologies decrease the distance that separate people and communities from educational opportunities, and thus represent a major delivery mechanism for distance learning. Furthermore, there is enormous potential in the learning through the formal distance education because it widening access to higher education and increasing the diversity of student population, since e-learning technologies provide opportunities for learning anywhere, anytime and from anyone. New technologies facilitate greater collaboration, both with global partners and at a more local level. Therefore, students can be together with an instructor and use e-learning, but distance learning implied that students and instructor are separated. Essentially, the major difference between e-learning learning and distance learning is geography, interaction and intention. Basically, students can still be in a classroom with an instructor and use e-learning. While in distance learning, students are separated from instructors and peers. In addition, e-learning requires some degree of in-person teacher interaction. While in distance learning, there is no in-person interaction at all. Furthermore, e-learning works as a supplement to direct teacher guidance. While, distance learning attempts all but replaces that guidance with pre-made instruction. E-learning means that your educational tool or gadget is based on and accessible from the Internet. Therefore, this paper focuses on the current and future trends in open and distance and e-learning environment in Nigeria.

### **Importance of Open and Distance and Electronic Learning Environment**

Babu and Reddy (2015) and Baz (2018) stated that the most basic benefit of e-learning and distance education is flexibility. Learners have indicated that e-learning has made education effective and accessible. It removes the physical barriers that prevent many people from fulfilling academic or career ambitions by allowing students to work from any part of the world at any time. Therefore, e-learning is about accessibility and inclusivity. It also has the potential to reach much larger number of people. In addition, e-learning is a computer based educational tool or system that enables learners to learn anywhere and anytime, and these are spread to include different educational sectors. This could also serve institutions and organizations that want to provide consistent education in more than one place. Babu and Reddy (2015) and Baz (2018) further stated that e-learning can deliver more value at very less cost than any other traditional mode of education, that, e-learning can

ensure all students receive a first-class education. Babu and Reddy (2015) and Baz (2018) opined that technical development in information technology (IT) have also been supporting e-learning. This has brought about rapid and low cost internet technology and allows for online interdisciplinary studies. Thus, learning can be considered as a motivation factor in terms of self-efficacy where student can organize their motivations on e-learning themselves.

Cavus (2015) opined that new e-learning technologies assist students and teachers by helping them to learn using interactive and collaborative techniques. In particular, the internet nowadays is offering many tools and application packages to educators that can be used at all stages of teaching, and such tools increase the effectiveness and efficiency of teaching. More so, Murphy (2019) stated that many students need individualized e-learning and are put off by expensive course fees associated with full-time, campus-based courses. For others, studying full-time courses with other important responsibilities, such as a current career or raising a young family. Achuonye (2020) stated that technology generally is critical to development of every aspect of human life because it is a resource and technique which endows economic growth with much of its capacity for satisfying human needs including education. The author further affirmed that it is difficult to discuss educational issues without technology, or that of technology without education as reflected in the following conceptual clarifications:

1. **technology in education** – mainly tools from other fields such as communication, engineering, etc. used by educators to enhance instructional processes, - technological tools used to enhance instructional processes.
2. **technology of education** – mainly learning theories and principles postulated by educators to guide successful instructional processes, instructional methods, techniques, strategies, and skills.
3. **technology for education** – inputs in educational programmes, that is, every form of technology (for example, tools, processes. strategies, techniques, etcetera) embedded into the contents of educational programmes, technologies to be taught/learnt/studied, as shown in the curriculum content, to be acquired by the learner by the end of the educational programmes.
4. **technology from education** – outputs from educational programmes, productivity of school graduates; every form of technological product emerging from graduates serving as workforce/manpower in various establishments (for example, businesses, industries, factories, companies, etcetera). Thus, e-learning provides more advantages and it is user friendly, even though it has disadvantages.

### **Disadvantages of Open and Distance and Electronic Learning Environment**

Electronic learning or simply put, e-learning creates plenty of opportunities, but there are some potential disadvantages, which students need to take into consideration. In terms of quality online resources, student support, and teaching methods, this can be checked through schools' credibility by their accreditation. This programme accreditation by relevant authorities such National Universities Commission (NUC) among others, is also essential for long-term career options for students. This is because most employers will accept an online degree, but accreditation is a sign that your course of study has prepared you for the realities of entering your new profession.

Babu and Reddy (2015) stated that problems of assessment and high dropout rate are some challenges of e-learning. They stated that, only 4% who enroll for online courses finish them. Also, part of the challenge to the distance learning community is the adoption and adaptation of the students to distance learning programmes. They further opined that solitary learning is hard and many people run into an insurmountable technical challenge they cannot solve. This might be due to

the lack of the kind of personal attention that comes from more traditional forms of training. Therefore, the solitary learner may become demoralized and abandon the e-learning programme. In addition, Ololube (2018) asserted that in a complex society like Nigeria, many factors affect distance education. Also, the challenges facing distance education agendas in Nigeria are in the areas of ICT usage, lack of constant electrical power and internet network integration and diffusion. Therefore, an interdisciplinary and integrated approach to e-learning and distance education is very necessary to ensure the successful development of Nigeria's economy and society.

### **Current Trends in Open and Distance and Electronic Learning Environment**

Currently, with the fast advancements in technologies, new methods have emerged in the generation of knowledge, presentation of knowledge, and the way people access the knowledge. Advancements in technologies have also affected teachers' instructional techniques (Cavus, 2015). Furthermore, distance education is undergoing fundamental changed, which include:

1. the learners are demanding more flexible, personalized, and easy to reach learning methods;
2. the learning needs are increasing and becoming more varied, and at the same time it is becoming a service that the individuals may be seeking throughout their lives;
3. the learners are demanding more and more to learn at the time and place of their choice, and at their own learning speeds;
4. the learners do not want to be dependent upon a certain learning method;
5. the teacher has become the person who guides the students on how to reach the knowledge instead of giving the knowledge; and
6. there is need for student centered education instead of the classical teacher centered education.

Distance learning actually relied on e-learning environment to function effectively. Distance teaching of students in any part of the world only need internet to gain access to its learning delivery, complete assignments, and earn credentials in their field. In today's digital technology era, terms such as 'e-learning' and 'distance learning' have become prevalent, with their conceptual meanings often used interchangeably. While both options offer a great deal of flexibility to its learner. In Nigeria, for example, the majority of distance learning courses include some face-to-face time with other students and teachers, but it is still important to make an effort to connect with your fellow students through chat-rooms, forums, and even regular meet-ups. This, in turn, will allow exchange of ideas of each other or offer some much needed moral support.

Ololube, Ubogu and Ossai (n.d.) examined the domain of open and distance learning or education programs in Nigeria. They stated that the usage, integration and diffusion of ICT has initiated a new age in educational methodologies. Thus, the usage, integration and diffusion of ICT has radically changed traditional methods of teaching and learning patterns in the domain as well as offering contemporary learning experiences to both instructors and students. In their paper, Ololube, Ubogu and Ossai (n.d.) discussions were made in terms of (a) the contexts of distance education in Nigeria, (b) the role of ICT in distance education, (c) the challenges facing ICT usage, integration and diffusion, and (d) the need to consider and to promote long-term policies outcomes when evaluating distance education programs. Their study was carried out using a qualitative research method; they used literature search and observation were an essential part of the instruments for data gathering. The study further found that the high hope and enthusiasm for open and distance education are interfered with as the nation is faced with inadequacies in essential services and infrastructures, such as: electricity, postal and telecommunication services and so on. However, there is an ongoing traditional development in distance education resources.

Zhang and Liu (2014) claimed that a sound and capable normal operation of distance education website should contain three aspect of distance learning; Intelligent network teaching platform or distance education devoid of monotonous copied textbooks; the expert system of database for questions and answers. But currently, in Nigeria, this is done by text messages, phone calls, face-to-face, internet and others. New e-learning environments are being used as platforms that are related to each other. These new e-learning environments essentially support the concept of e-learning. These new e-learning environments and concepts are now indispensable in the field of education. These new e-learning environments and trends offer significant benefits such as creating the best education and development plan, creating it in a flexible environment, and creating and maintaining a personal learning environment and continuity (Baz, 2018). According to Baz (2018) and Viewsonic (2019), the new trends in e-learning are compared and contrasted in the Tables below.

	Current trends in e-learning by Baz (2018)		Current trends in e-learning by Viewsonic (2019)
i	Artificial Intelligence	i	Artificial Intelligence
ii	Mobile learning	ii	Mobile Learning
iii	Gamification	iii	Gamification
iv	Online video	iv	Video Learning
v	Micro credentials	v	Micro Learning
vi	Virtual and empowered reality	vi	Learning Management Systems
vii	Blended learning	vii	Adaptive Learning
viii	Internet of things	viii	Social learning
ix	Cloud e-learning	ix	Learning and development
x	Big data	x	Augmented and virtual Learning

Traxler (2018) and Ferrer (2018) also identified the following key emerging trends in e-learning as:

Current trends in e-learning by Ferrer (2018)	Current trends in e-learning by Traxler (2018)
Project based learning	Online learning tools
Master based learning	Flipped learning
Blended learning	MOOCs and online courses
Collaborative learning	Learning Management Systems
Hybrid model	Education and Gamification
Virtual learning environment (blackboard, canvas, renwebetc)	Mixing and matching digital tools

Some of the above e-learning environments/platforms will be explained briefly and their application to distance education discussed. It is suggested that institutions, instructors or teachers and lecturers only use the educational environment tools or platforms that fit their needs based on the educational curriculum. E-learning is set to become an integral part of education. The following learning environments/platforms are discussed briefly and their application to distance education. For the current trends, such as (i) the application of Learning Management Systems (LMS) in Distance education will be discussed in the paper. While for the future trends, such as (ii) the application of Artificial Intelligence (AI) in distance education will be discussed in the paper.

## Application of Learning Management Systems in Open and Distance and E-Learning

Institutions in Sub-Saharan Africa especially those offering distance education have been combining Learning Management Systems (LMS) with the traditional face-to-face instructional delivery in order to reach more learners across various geographical boundaries. Despite the increased adoption of LMS in sub-Saharan Africa, the actual usage is reported to be very low (Mbeta, 2015). Cavus (2015) explained the general information about the LMS, and in addition described all the aspects of the LMS such as their general structure, types, and so on. In particular, the highly popular Moodle LMS is described in greater detail. The LMS provides the virtual learning platform for the e-learning by enabling the management, monitoring of students, delivery, tracking of learning, testing, communication, registration process and scheduling. Furthermore, LMS provides the platform for virtual learning environment and some common features of LMS are:

1. The delivery of knowledge to students in various forms, such as word, word, power-point, flash, video, audio, and so on;
2. The guidance of students in the direction of education;
3. The delivery of the results to students;
4. The ability of students to do interactive applications;
5. The communication process between student-student vs student-teacher (for example, discussion boards, chat, e-mail among others);
6. The assessment of students through home works and examinations;
7. The registration process;
8. The interaction between student-lesson content;
9. The scheduling;
10. The keeping of records for students, teachers, and system (that is logs);
11. The class management;
12. The entering the examinations and keeping record of the results;
13. The collecting the home works;
14. Reporting; grade keeping; tracing student attendance records; student tracking; sharing knowledge and ideas; and distributing e-learning contents on-line and students seeing their own education times.

More so, there are many LMS systems on the market that can be obtained for free (for example, ATutor, Moodle, Claroline, and others) or through payment (for example, WebCT, Blackboard, and many others). Moodle seems to be one of the most efficient and most popular LMS amongst the open source free LMS (Cigdem & Tirkes 2010; Cavus, 2015) According to Mbeta (2015), LMS are now installed in the majority of higher education institutions in sub-Saharan Africa. These web-based LMS are intended to support teaching and learning activities. They consist of various features that enable faculty members to share learning materials as well as providing interaction with their students both synchronously and asynchronously. The most widely adopted LMS in the Sub-Sahara Region are: Blackboards, Sakai, KEWL and Moodle. Furthermore, those institutions in the Sub-Saharan Africa now spend a significant proportion of their limited resources on installing and maintaining LMS. This expenditure continues to increase, raising questions as to whether LMS in these institutions are fulfilling their potential. Mbeta (2015) investigated the use of LMS across the Sub-Saharan Africa region. It was concluded in the article by proposing strategies that can help institutions make more effective use of their LMS. The aim of the study was to help institutions to identify effective strategies for supporting increased and cost-effective LMS usage.

Furthermore, the majority of lectures in higher education institutions in the Sub-Saharan Africa region lack the tradition and the experience to develop quality materials for their students. As a result, it is not uncommon to find many adopted LMS do not have enough current and relevant quality learning materials uploaded in it. It should be noted that learners rely on learning materials as their major source of information during the learning process. Consequently, they place great value on content that is well-organized, effectively presented, interactive, clearly written, in the right length, useful, flexible, and provide appropriate degree of breath. However, many studies have shown that many users cannot use the LMS effectively due to lack of support services. To be able to use the LMS effectively, institutions are required to provide reliable, timely, and effective support services to such users. The support services such as training and several on-going support services are very important in order for users to continue using the LMS installed in the institutions. The on-going support services may include email, tutorial videos, live telephone support, instant messaging, or informational websites containing documentation.

### **Application of Artificial Intelligence in Open and Distance and E-Learning**

The concept of Artificial Intelligence (AI) was proposed in 1956. The AI technology can make the computer to mimic the human brain's cognitive system, analysis and feedback for the received data. Prawam (2019) opine that when a computer or the electronic terminals have been given AI technology, it will react close to human in terms of questions. The author further stated that AI is divided into five areas, namely: machine thinking; machine perception; machine behaviour; machine learning; construction technology of intelligence system and IntelliSense system of computer. And the fields of AI include: anthropomorphic robots; electronic terminal intelligent systems; voice recognition; intelligent dialogue; IntelliSense system of computer.

Artificial Intelligence is aimed to bridge the gap between student and educators with computer applications (Kose & Koc, 2015). It focuses on creating and training machines that find solution to problems which normally require human intelligence. AI system can be powered by machine learning, deep learning or operating rules. For the future, to improve the current teaching, in which the teacher is the source of knowledge, and student the recipient, there is a need to fundamentally re-imagine the role of an educator the university system or distance education. Machine learning aids to create deep learning systems that can translate English language for example into the student's native language in any online distance course material. And also, assist in other areas of education delivery.

### **Conclusion**

Electronic learning technologies have been advancing rapidly and dramatically. Currently, it has become necessary to use this form of technology in the education sector. Therefore, it has become necessary to reorganize or reform the education sector. The needs of both students and teachers in distance learning are also changing. From the numerous learning technologies, LMS seems to be at the top of the latest technological advancements that will satisfy all the requirements of teachers and students (Cavus, 2015). However, the context of sub-Saharan Africa, for example, Nigeria is different because institutions face different challenges from those faced by institutions in the developed countries. As a result, the adoption and implementation of LMS and other electronic systems do not guarantee that institutions will enjoy similar benefits as those institutions in the developed countries. However, e-learning is set to become an integral part of education. And many experts believe online learning is the future of education. However, the quality of learning materials has to be checked properly that it conforms to the curriculum before uploading to any online platform for distance learners.

E-learning is the futures of education especially distance education. Currently, most higher education institutions in Nigeria and Sub-Saharan Africa Region use the LMS technology. For the future, the new focus of e-learning environment is to identify the content area and individualization using the AI application. The growth and evolution of e-learning is still very much emerging and uniquely dependent on the needs and demands of the world's diverse distance and higher education systems. There will always be a place for conventional classroom-based teaching method, but even these are becoming increasingly more integrated with e-learning. E-learning is set to become a major part of learning institutions all around the world.

### Suggestions for Future Practices

Based on the literature reviewed, the following suggestions were made:

1. Creation of a free online digital library community environment for distance learners is suggested.
2. It is also suggested that technological tools should be made available by government and various institutions running online programmes.
3. Promoting research and making proper use of research findings, research work should be encouraged early in all educational programmes, rather than wait until the final year. Efforts should not just be on plagiarism check, but, also to ensure that quality research work is accomplished. There should be a well-equipped inter-connected centre from higher education institutions to states and federal levels for collation, management, dissemination and utilization of sound research findings to appropriate bodies for application of real life problems, and/or further research. (Achuonye, 2020)
4. Higher educational institutions, instructors and teachers have to choose and use the suitable learning environments/platforms suitable to their curriculum for effective and efficient delivery of learning through distance education for a sustainable future.

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